



STIC Search Report

Biotech-Chem Library

STIC Database Tracking Number: 195101

TO: CECILIA JAISLE
Location: REM/4E78/5C18
Art Unit: 1624
Wednesday, July 19, 2006
Case Serial Number: 10/824980

From: John DiNatale
Location: Biotech-Chem Library
REM-1B65
Phone: (571)272-2557

john.dinatale@uspto.gov

Search Notes

Examiner JAISLE,

See attached results.

If you have any questions about this search feel free to contact me at any time.

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John DiNatale
Technical Information Specialist
STIC Biotech/Chem Library
(571)272-2557

600

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Scientific and Technical Information Center

10/824980

SEARCH REQUEST FORM

Requester's Full Name: Cecilia Joisle Examiner #: 83013 Date: 7-10-06
Art Unit: 1624 Phone Number: 2-9931 Serial Number: 10/362050
Location (Bldg/Room#): REM4E78 (Mailbox #): 5213 Results Format Preferred (circle): PAPER DISK

To ensure an efficient and quality search, please attach a copy of the cover sheet, claims, and abstract or fill out the following:

Title of Invention: see Bib Data Sheet
Inventors (please provide full names): _____

Earliest Priority Date: _____

Search Topic: _____
Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc., if known.

For Sequence Searches Only Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.

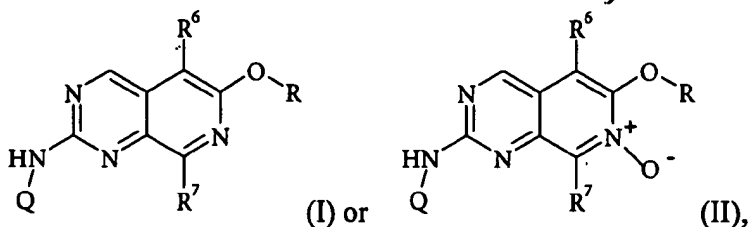
Call w/ any questions

CLAIMS

The invention claimed is:

5

1. A compound having the Formula (I) or (II):



or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

- 10 R is selected from:

- (a) alkyl optionally-substituted with one to three of R¹⁷;
- (b) cycloalkyl optionally substituted with one, two or three groups selected from R¹⁸;
- and
- (c) optionally-substituted aryl;

- 15 Q is selected from alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, and alkyl substituted with one, two or three of halogen, cyano, -OR⁸, -SR⁸, -C(=O)R⁸, -C(O)₂R⁸, -C(=O)NR⁸R⁹, -S(O)_pR¹⁰, -C(O)₂NR⁸R⁹, -S(O)₂NR⁸R⁹, -NR⁸R⁹, cycloalkyl, substituted cycloalkyl, heterocyclyl, and/or substituted heterocyclyl;

R⁶ is hydrogen or lower alkyl;

- 20 R⁷ is selected from hydrogen, alkyl, substituted alkyl, halogen, cyano, nitro, hydroxy, alkoxy, haloalkoxy, amino, alkylamino, and optionally-substituted cycloalkyl, heterocyclyl, aryl, or heteroaryl;

R⁸ and R⁹ are (i) independently selected from hydrogen, alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, and substituted

- 25 heterocyclyl; or (ii) when R⁸ and R⁹ are attached to the same nitrogen atom (as in -C(O)₂NR⁸R⁹, -S(O)₂NR⁸R⁹, and -NR⁸R⁹), R⁸ and R⁹ may be taken together to form an optionally-substituted heterocyclyl ring;

R¹⁰ is alkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, or substituted heterocyclyl;

R¹⁷ is at each occurrence independently selected from halogen, haloalkoxy, haloalkyl, alkoxy, or optionally-substituted phenyl, benzyl, phenyloxy, benzyloxy, or cycloalkyl;

5 R¹⁸ is at each occurrence independently selected from alkyl, substituted alkyl, halogen, haloalkyl, haloalkoxy, cyano, alkoxy, acyl, alkoxycarbonyl, alkylsulfonyl, or optionally-substituted phenyl, phenyloxy, benzyloxy, cycloalkyl, heterocyclyl, or heteroaryl; and

p is 1 or 2.

10

2. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

Q is selected from an alkyl or substituted alkyl having the formula -C(R¹R²R³);

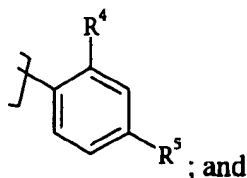
15 R¹, R² and R³ are selected from hydrogen, alkyl, hydroxyalkyl, alkoxyalkyl, -(C₁₋₄alkylene)-S(O)_pR¹⁰, -(C₁₋₄alkylene)-C(O)₂R⁸, cycloalkyl, cycloalkylalkyl, heterocyclyl, or heterocycloalkyl, wherein said cycloalkyl and heterocyclyl groups are, in turn, optionally substituted with up to one of R¹² and up to one of R¹⁴; and

20 R¹² and R¹⁴ are independently selected where valence allows from C₁₋₄alkyl, hydroxy, oxo (=O), -O(C₁₋₄alkyl), -C(=O)H, -C(=O)(C₁₋₄alkyl), -C(O)₂H, -C(O)₂(C₁₋₄alkyl), and -S(O)₂(C₁₋₄alkyl).

25

3. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein R is phenyl substituted with one to two of lower alkyl, halogen, haloalkyl, haloalkoxy, cyano, and nitro.

4. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein R is:



R⁴ and R⁵ are selected from halogen, haloalkyl, haloalkoxy, and cyano.

5. A compound according to claim 4, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

5 R⁴ and R⁵ are both halogen.

6. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein R⁶ and R⁷ are both hydrogen.

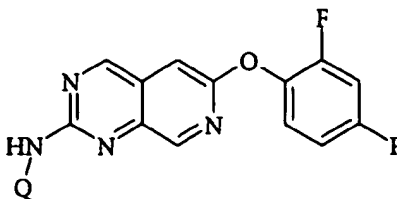
10 7. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein Q is C₁₋₆alkyl or hydroxy(C₁₋₆alkyl).

8. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein Q is an optionally-substituted C₃₋₇cycloalkyl or an optionally-substituted heterocyclic ring.
15

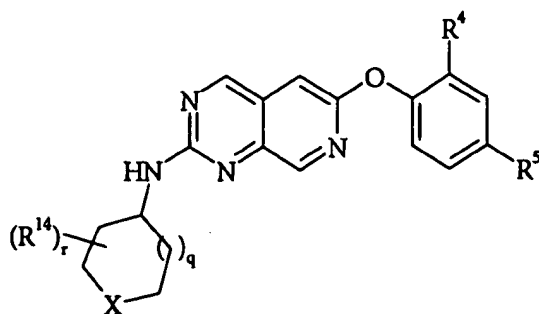
9. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

20 Q is cyclohexyl, piperidin-4-yl, or tetrahydropyran-4-yl, wherein each of said rings in turn is optionally-substituted with up to two of lower alkyl, -OH, -C(O)₂(C₁₋₄alkyl) and/or -S(O)₂(CH₃).

10. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, having the formula:



11. A compound according to claim 1, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, having the formula:



wherein:

X is $-O-$, $-C(=O)-$, $-N(R^{12a})-$, or $-CH(R^{12b})-$;

R^{12a} is selected from hydrogen, C_{1-4} alkyl, $-C(=O)R^{15}$, $-C(O)_2R^{15}$, and $-S(O)_2(C_{1-4}alkyl)$;

5 R^{12b} is selected from hydrogen, C_{1-4} alkyl, $-OR^{15}$, $-C(=O)R^{15}$, $-C(O)_2R^{15}$, and $-S(O)_2(C_{1-4}alkyl)$;

R^{14} is selected from C_{1-4} alkyl, oxo ($=O$), $-OR^{15}$, $-C(=O)R^{15}$, $-C(O)_2R^{15}$, and $-S(O)_2(C_{1-4}alkyl)$;

R^{15} is selected from hydrogen and C_{1-4} alkyl;

q is 0 or 1; and

r is 0, 1 or 2.

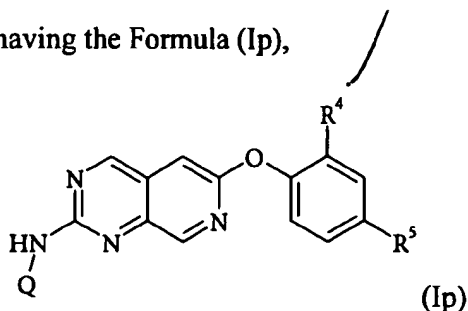
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12. A compound according to claim 11, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

R^4 and R^5 are both fluoro.

15 13. A compound according to claim 11, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein X is $-NR^{12a}-$, R^{12a} is $-S(O)_2(C_{1-4}alkyl)$, and q is 1.

14. A compound having the Formula (Ip),



20

or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein:

Q is alkyl, substituted alkyl or an optionally-substituted cycloalkyl or heterocyclyl, provided Q is not arylalkyl or heteroarylalkyl ; and

R⁴ and R⁵ are both halogen;

5 15. A compound according to claim 14, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein R⁴ and R⁵ are both fluoro.

 16. A compound according to claim 14, or an isomer, prodrug, or pharmaceutically-acceptable salt thereof, wherein Q is an optionally-substituted monocyclic cycloalkyl or
10 heterocyclyl ring.

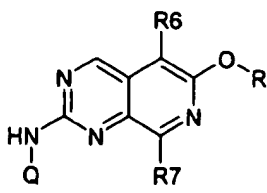
 17. A pharmaceutical composition comprising a therapeutically effective amount of compound according to Claim 1 in combination with a pharmaceutically-acceptable excipient.

15 18. A method for treating a p38-mediated disorder in a patient comprising administering to the patient in need of such treatment, an effective amount of a compound according to Claim 1.

 19. The method of Claim 18, wherein the p38-mediated disorder is selected from the
20 group consisting of arthritis, Crohn's disease, Alzheimer's disease, adult respiratory distress syndrome, chronic obstructive pulmonary disease, asthma, stroke, sepsis, myocardial infarction, and spondylitis.

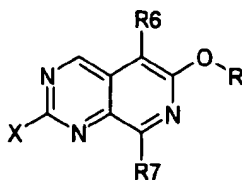
 20. A method for inhibiting p38 kinase in a mammal comprises administering to said
25 mammal a compound according to claim 1.

 21. A process for preparing a compound of formula (I) ✓



wherein R is selected from:

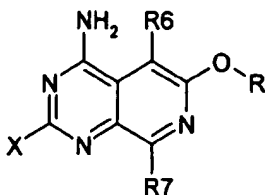
- (a) alkyl optionally-substituted with one to three of R^{17} ;
- (b) cycloalkyl optionally substituted with one, two or three groups selected from R^{18} ;
- and
- (c) optionally-substituted aryl;
- 5 Q is selected from alkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, substituted heterocyclyl, and alkyl substituted with one, two or three of halogen, cyano, $-OR^8$, $-SR^8$, $-C(=O)R^8$, $-C(O)_2R^8$, $-C(=O)NR^8R^9$, $-S(O)_pR^{10}$, $-C(O)_2NR^8R^9$, $-S(O)_2NR^8R^9$, $-NR^8R^9$, cycloalkyl, substituted cycloalkyl, heterocyclyl, and/or substituted heterocyclyl; R^6 is hydrogen or lower alkyl;
- 10 R^7 is selected from hydrogen, alkyl, substituted alkyl, halogen, cyano, nitro, hydroxy, alkoxy, haloalkoxy, amino, alkylamino, and optionally-substituted cycloalkyl, heterocyclyl, aryl, or heteroaryl;
- R^8 and R^9 are (i) independently selected from hydrogen, alkyl, haloalkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, and substituted
- 15 heterocyclyl; or (ii) when R^8 and R^9 are attached to the same nitrogen atom, R^8 and R^9 may be taken together to form an optionally-substituted heterocyclyl ring;
- R^{10} is alkyl, hydroxyalkyl, alkoxyalkyl, cycloalkyl, substituted cycloalkyl, heterocyclyl, or substituted heterocyclyl;
- R^{17} is at each occurrence independently selected from halogen, haloalkoxy, haloalkyl, alkoxy, or
- 20 optionally-substituted phenyl, benzyl, phenyloxy, benzyloxy, or cycloalkyl;
- R^{18} is at each occurrence independently selected from alkyl, substituted alkyl, halogen, haloalkyl, haloalkoxy, cyano, alkoxy, acyl, alkoxy carbonyl, alkylsulfonyl, or optionally-substituted phenyl, phenyloxy, benzyloxy, cycloalkyl, heterocyclyl, or heteroaryl; and
- p is 1 or 2;
- 25 wherein said process comprises:
- (i) providing a compound of formula (8); and



where X is a leaving group; and

(ii) contacting said compound of formula (8) with a compound of the formula NH_2Q in a polar, aprotic solvent.

22. The process of claim 21, wherein said compound of formula (8) is provided by
5 treating a compound of formula (7) with *t*-butylnitrite:



* * * * *



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Bib Data Sheet

CONFIRMATION NO. 7688

SERIAL NUMBER 10/824,980	FILING OR 371(c) DATE 04/15/2004 RULE	CLASS 514	GROUP ART UNIT 1624	ATTORNEY DOCKET NO. R0164B-REG
APPLICANTS Nolan James Dewdney, San Jose, CA; David Michael Goldstein, San Jose, CA;				
** CONTINUING DATA ***** This appln claims benefit of 60/463,229 04/16/2003 ** FOREIGN APPLICATIONS *****				
IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 06/26/2004				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		STATE OR COUNTRY CA	SHEETS DRAWING 0	TOTAL CLAIMS 22
				INDEPENDENT CLAIMS 3
ADDRESS 24372				
TITLE Substituted 7-azaquinazoline compounds useful as p38 kinase inhibitors				
FILING FEE RECEIVED 806	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

STIC SEARCH RESULTS FEEDBACK FORM

Biotech-Chem Library

Questions about the scope or the results of the search? Contact *the searcher or contact*:

Mary Hale, Information Branch Supervisor
571-272-2507 Remsen E01 D86

Voluntary Results Feedback Form

➤ I am an examiner in Workgroup: Example: 1610

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

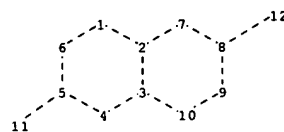
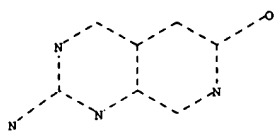
- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/Biotech-Chem Library Remsen Bldg.



ring nodes :

1 2 3 4 5 6 7 8 9 10

ring/chain nodes :

11 12

chain bonds :

5-11 8-12

ring bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 7-8 8-9 9-10

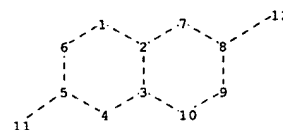
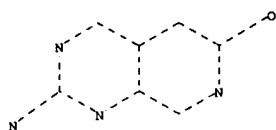
exact/norm bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 5-11 7-8 8-9 8-12 9-10

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:CLASS

12:CLASS



chain nodes :

11 12

ring nodes :

1 2 3 4 5 6 7 8 9 10

chain bonds :

5-11 8-12

ring bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 7-8 8-9 9-10

exact/norm bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 5-11 7-8 8-9 8-12 9-10

isolated ring systems :

containing 1 :

Connectivity :

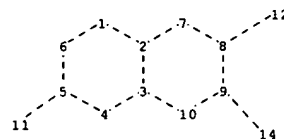
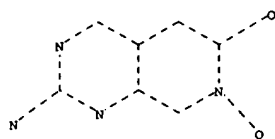
1:2 E exact RC ring/chain 4:2 E exact RC ring/chain 6:2 E exact RC ring/chain

11:2 M minimum RC ring/chain

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom

12:Atom



chain nodes :

11 12 14

ring nodes :

1 2 3 4 5 6 7 8 9 10

chain bonds :

5-11 8-12 9-14

ring bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 7-8 8-9 9-10

exact/norm bonds :

1-2 1-6 2-3 2-7 3-4 3-10 4-5 5-6 5-11 7-8 8-9 8-12 9-10 9-14

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom 11:Atom
12:Atom 14:CLASS